PROPOSED EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Barbara Gibbs on August 20, 2010.

The application has been amended as follows:

Abstract

The present invention relates to the covalent binding of a hydrogel to an extracellular matrix (ECM). The integration of the hydrogel with the tissue is superior to that in previous techniques. Moreover, unlike previous techniques, the present invention does not require a photoinitiator. Potential therapeutic applications include tissue repair and delivery of drugs or cells. The ECM is first exposed, then treated with a priming agent. Then a polymerizable agent is added and crosslinked to the ECM. Two primary embodiments of methods are disclosed. In the first, the priming agent is an oxidizer which creates tyrosyl radicals in the ECM, which are then bound by acrylate groups in the polymerizable agent. In the second, the priming agent contains aldehydes which bind amino groups in the ECM.

IN THE CLAIMS:

40. (Previously Presented) A method of integrating a hydrogel to the extracellular matrix of a musculoskeletal tissue, comprising the steps of:

(a) priming the surface of a musculoskeletal tissue by treating the musculoskeletal tissue with a priming agent to create a primed musculoskeletal tissue, wherein the priming agent comprises a polysaccharide with at least one produced aldehyde group and a first at least one free radical polymerizable group, wherein the aldehyde is produced by treating said polysaccharide with periodate, and the least one produced aldehyde group reacts with the extracellular matrix of the musculoskeletal tissue to covalently bind the extracellular matrix of the musculoskeletal tissue and the priming agent;

(b) adding to the primed musculoskeletal tissue a polymerizable agent and a radical photoinitiator, wherein the polymerizable agent comprises a biocompatible polymer having second at least one free radical polymerizable group; and

(c) reacting the primed musculoskeletal tissue and the polymerizable agent by a radical reaction to create an integrated hydrogel covalently bound to the musculoskeletal tissue;

wherein the radical reaction is between the first and second free radical polymerizable groups, and the first and second free radical polymerizable groups are each independently selected from the group consisting of an acrylate, diacrylate, oligoacrylate, methacrylate, dimethacrylate, and oligo methacrylate.

The following is an examiner's statement of reasons for allowance:

Liu et al (US 5,866,165) teach the use of a polysaccharide that is reacted with an oxidizing agent to open sugar rings on the polysaccharide to form aldehyde groups. The aldehyde groups are reacted to form covalent linkages to collagen tissue (column 2 lines 25-46).

Liu et al do not teach the addition of acrylate groups to the polysaccharide in order to form an integrated hydrogel covalently bound to the cartilage tissue.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Claims 40, 42, 43, 46-49, 60 and 61 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAURA SCHUBERG whose telephone number is (571)272-3347. The examiner can normally be reached on Mon-Fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber can be reached on (571) 272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner
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